ABSTRACT

Title: **The effect of vibration training on the Power Plate on human performance**

Objectives: Following the training schedule, the groups will be tested and results compared; as well as the study results revealed.

Methods: In my diploma work I set out to test 16 individuals, who undergo an 8 week training program on the Power Plate vibration technology machine. Eight women and eight men will be separated into two groups. The first group (four men, and four women) will exercise on a vibrating machine, whereas the second group will exercise on the machine without any vibrational stimulus. ***Explosive agilities*** (Boscuv test – longest air-time). ***Reaction speed*** (auditory reaction to a beep signal, and reactometer test for both the upper and lower limbs. ***Flexibility*** (testing a sitting hamstring reach). ***Antropometric testing*** (Body mass, girth, active muscle weight, BMI). In order to be able to judge development, as well as to gauge kinesiologic abilities, I applied a number of special tests. The results of individual results are noted in the tables. The T-test was applied as a statistics method.

Results: Through repeated measure, it was discovered that the group training on the Power Plate achieved improvements in three out of four tests. Two tests showed above average results against standard, especially in the reaction time tests, where there was a significant difference between the groups training with vibration technology, as opposed to the group training without. The flexibility test also showed increase in flexibility in the group training with vibration technology, although the difference was not as pronounced as in the previous tests.

In the fourth test (the reaction speed of the upper limbs), however, there was a decrease of performance in the vibration training group. One possible explanation is that in training plan A, and B, there was not much emphasis placed on the upper limbs. Also, in other case studies it was confirmed (with

the exception of one), that the effect of vibration is beneficial not only to the main population, whos main goal is health, but also for sports professionals, who seek to improve their performance.

Keywords: acceleration training, sports performance, Bosc test, van der Meer.